

REMARKS

This application is believed to be in condition for allowance at the time of the next Official Action.

The Official Action rejects claims 1, 3, 5, 6, and 11-16 under 35 USC §103(a) as being anticipated by GALLAGHER et al. Reconsideration and withdrawal of this rejection are respectfully requested for the following reasons:

The Official Action identifies those elements of the GALLAGHER et al. device and method that are interpreted as meeting the features of the rejected claims. The Official Action draws particular attention to Figure 8D of GALLAGHER et al.

Applicants note that Figure 8D represents an interim step in the manufacturing process illustrated in the sequence of Figures 8A-8H. Accordingly, the structure illustrated in Figure 8D is not a magnetic memory, as the present claim recites. The structure of Figure 8D is a collection of materials which, if subjected to the method steps illustrated in Figures 8E-8G, might ultimately produce a magnetic memory. For at least this reason, neither the device identified by the Official Action nor any other structure disclosed by GALLAGHER et al. meets all of the features of the rejected claims, and the rejection necessarily fails for at least this reason.

Moreover, among the features recited in rejected claim 1 is a sidewall insulating film. The Official Action reads this

claimed feature on element 90 of the interim GALLAGHER et al. structure of Figure 8D.

In stark contrast to the Official Action's characterization of element 90 of GALLAGHER et al., the reference itself describes such element in column 10, lines 23-26: "A second resist pattern 90 is then put on the wafer to allow for Ar ion milling removal of selected regions of tunnel barrier 20 and base electrode stack 10, which are not protected by the resist."

Clearly, element 90 is not a sidewall insulating film. Rather, it is merely a resist pattern, which exists only temporarily during the manufacturing process to protect portions of the device that that are meant to keep the layers of tunnel barrier 20 and base electrode stack 10.

As is evident from Figure 8E representing the immediately following step, resist pattern 90 is removed once the ion milling step is complete. Accordingly, resist pattern 90 does not remain part of the element in its final form, and therefore cannot operate as, nor can it reasonably characterized as, a sidewall insulating film.

The analysis provided above applies equally to independent method claim 12. The resist pattern 90 cannot be characterized as the recited sidewall insulating film, as the resist pattern exists only temporarily during a single step of the manufacturing process described by GALLAGHER et al.

For at least these reasons, the GALLAGHER et al. reference cannot reasonably be interpreted as anticipating independent claims 1 and 12 and, by extension, the rejected claims that depend therefrom.

The Official Action rejects claim 4 under 35 USC §102(e) as being anticipated by HIROSHI. Reconsideration and withdrawal of this rejection are respectfully requested for the following reasons:

At the outset, applicants note that the reference in question is a published Japanese application. The Official Action applies the reference under 35 USC §102(e). 35 USC §102(e) defines as prior art only U.S. patents, published U.S. patent applications, and certain English language published PCT applications. Accordingly, 35 USC §102(e) cannot define as prior art a published Japanese application.

While a published Japanese application cannot be prior art under 35 USC §102(e), it can be prior art under 35 USC §102(a) or (b) if it meets the necessary requirements. In the present case, the published Japanese application has a publication date of July 31, 2003. Such publication date would render the HIROSHI reference 102(b) prior art only if such publication dates fell more than one year prior to the September 19, 2003 effective U.S. filing date of the present application, which is not the case.

Alternatively, the HIROSHI publication would constitute 102(a) prior art if its publication date fell prior to a provable date of rejection for the rejected claim. While the July 31, 2003 publication of the HIROSHI reference falls prior to the September 19, 2003 effective U.S. filing date of the present application, it is later than the October 2, 2002 filing date of the Japanese application whose priority is claimed by the present application.

Applicants include herewith a verified translation of such priority application. This serves to prove constructive reduction to practice prior to the HIROSHI publication date. This effectively eliminates the HIROSHI reference as a 102(a) reference. As the HIROSHI reference no longer represents prior art to the present application, the present rejection cannot stand. Reconsideration and withdrawal of such rejection are therefore respectfully requested.

The Official Action rejects claim 7 under 35 USC §103(a) as being unpatentable over GALLAGHER in view of BHATTACHARYYA et al. Reconsideration and withdrawal of this rejection are respectfully requested for the following reasons.

Rejected claim 7 depends directly from independent apparatus claim 1. The Official Action offers the further BHATTACHARYYA et al. reference merely for its asserted teaching or suggestion of a distance d at a plane between an outer circumference of the top of the lower portion structure and an

outer circumference and a top of the upper portion structure of the magnetic element within a particularly recited range.

However, irrespective of the ability of this reference to teach or suggest that for which it is specifically offered, it nonetheless fails to overcome the shortcomings of the primary GALLAGHER reference. Accordingly, the combination of references necessarily fails to render obvious the totality of features recited by the combination of claims 1 and 7. Reconsideration and withdrawal of this rejection are therefore respectfully requested.

The Official Action rejects claims 8, 9, and 19 under 35 USC §103(a) as being unpatentable over GALLAGHER in view of OKAZAWA. Reconsideration and withdrawal of this rejection are respectfully requested for the following reasons:

Each of claims 8 and 9 depends directly from independent claim 1. As a consequence, each necessarily implicitly recites the features of such claim.

Irrespective of the ability of the OKAZAWA et al. reference to teach or suggest that for which it is offered, it nevertheless fails to overcome the shortcomings of the primary GALLAGHER reference for the reasons addressed in detail above in connection with the anticipation rejection.

As the combination of references fails to teach or suggest the full set of features explicitly recited in each rejected claim and the independent claim from which it depends,

the combination necessarily fails to render either of the claims obvious, and reconsideration and withdrawal of this rejection are respectfully requested.

The Official Action rejects claim 10 under 35 USC §103(a) as being unpatentable over GALLAGHER in view of DURLAM et al. Reconsideration and withdrawal of this rejection are respectfully requested for the following reasons:

The Official Action offers the DURLAM et al. reference for its asserted teaching or suggestion of the sidewall insulating film being formed of at least one of metal nitride, metal oxide, and metal carbide. However, the combination of references still fails to teach or suggest the full set of features recited in claim 10 by virtue of its dependence from claim 1. Reconsideration and withdrawal of this rejection are therefore respectfully requested.

The Official Action rejects claims 17 and 18 under 35 USC §103(a) as being unpatentable over GALLAGHER in view of YOSHIDA et al. Reconsideration and withdrawal of this rejection are respectfully requested for the following reasons:

The Official Action offers the YOSHIDA reference for its asserted teaching or suggestion of the etching of a multilayer film using reactive ion etching. The YOSHIDA reference, however, still fails to overcome the shortcomings of the primary GALLAGHER reference, and reconsideration and

withdrawal of this rejection are therefore respectfully requested.

The Official Action rejects claim 20 under 35 USC §103(a) as being unpatentable over GALLAGHER in view of OKAZAWA and further in view of TUTTLE. Reconsideration and withdrawal of this rejection are respectfully requested for the following reasons:

The Official Action offers the OKAZAWA and TUTTLE references for their asserted teaching or suggestion of the combination of steps recited in claim 20. However, the further references still fail to overcome the shortcomings of the GALLAGHER reference in connection with independent method claim 12, from which claim 20 directly depends. Reconsideration and withdrawal of this rejection are therefore respectfully requested.

In light of the arguments presented above, applicants believe the present application is in condition for allowance and an early indication of the same is respectfully requested.

If the Examiner has any questions or requires further clarification of any of the above points, the Examiner may contact the undersigned attorney so that this application may continue to be expeditiously advanced.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any

overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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APPENDIX:

- a verified translation of the priority application